

Art Unit: 1725

Examiner's Amendment

1. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

1-32 – cancelled

33 (new) An ink comprising: metal thin film fragments having an average thickness of 0.01 to 0.1 μm and an average particle diameter of 5 to 25 μm ; and a binder resin having 50 to 500 mmol/kg of at least one selected from the group consisting of a carboxyl group, a phosphoric acid group, a sulfonic acid group and metal salts thereof; wherein the binder resin is selected from the group consisting of

a. a vinyl chloride resin, a vinylidene chloride resin, a vinyl chloride-vinyl acetate resin, a ethylene-vinyl acetate resin, a polyolefin resin, a chlorinated olefin resin, or an ethylene-acrylic resin wherein the vinyl chloride resin, the vinylidene chloride resin, the vinyl chloride-vinyl acetate resin, the ethylene-vinyl acetate resin, the polyolefin resin, the chlorinated olefin resin, and the ethylene-acrylic resin contain maleic anhydride, fumaric acid or salts thereof;

b. a petroleum-based resin, an epoxy resin, or a cellulose derivative resin, wherein the petroleum-based resin, the epoxy resin, and the cellulose derivative resin are modified with chloroacetic acid, bromoacetic acid, or sulfuric acid; or

Art Unit: 1725

c. a polyurethane resin, an amide-modified polyurethane resin, a urea-modified polyurethane resin, an epoxy-modified polyurethane resin, a polyester resin, an amide-modified polyester resin, a urea-modified polyester resin, or an epoxy-modified polyester resin, wherein the polyurethane resin, the amide-modified polyurethane resin, the urea-modified polyurethane resin, the epoxy-modified polyurethane resin, the polyester resin, the amide-modified polyester resin, the urea-modified polyester resin, and the epoxy-modified polyester resin is obtained by condensation of a polyol and/or a polycarboxylic acid and 2,2-dimethylolpropionic acid, phthalic acid having a sulfonic acid group, diethanolaminoethylphosphoric acid, or salts thereof.

34. (new) The ink according to claim 33, wherein the content of the metal thin film fragments is from 10 to 60% by mass based on a non-volatile component in the ink.

35. (new) The ink according to claim 33, wherein the metal thin film fragments are obtained from a metal thin film which is obtained by at least one method selected from the group consisting of sputtering, malleation and aluminum vapor deposition.

36. (new) The ink according to claim 33, wherein the metal thin film fragments are fragments obtained from a thin film made of metal.

37. (new) The ink according to claim 33, wherein the metal thin film fragments are fragments obtained from a vapor-deposited metal thin film.

Art Unit: 1725

38. (new) The ink according to claim 33, wherein the metal thin film fragments have an average thickness of 0.01 to 0.08 μm .

39. (new) The ink according to claim 33, wherein the content of the carboxyl group, the phosphoric acid group, sulfonic acid group, or metal salts thereof is 50 to 250 mmol/kg.

40. (new) The ink according to claim 33, which contains no water.

41. (new) The ink according to claim 40, which contains an acid anhydride.

42. (new) The ink according to claim 41, wherein the ink contains 0.01 to 30% by mass of an acid anhydride moiety as a $-\text{C}(=\text{O})\text{OC}(=\text{O})-$ group in the acid anhydride based on the metal thin film fragments.

43. (new) An ink comprising: metal thin film fragments having an average thickness of 0.01 to 0.1 μm and an average particle diameter of 5 to 25 μm ; a binder resin having 50 to 500 mmol/kg of at least one selected from the group consisting of a carboxyl group, a phosphoric acid group, a sulfonic acid group and metal salts thereof; and 0.01 to 30% by mass, based on the metal thin film fragments, of an acid anhydride moiety as a $-\text{C}(=\text{O})\text{OC}(=\text{O})-$ group in an acid anhydride, wherein the acid anhydride is an anhydride selected from the group consisting of anhydride of monobasic acid, an anhydride of dibasic acid, an anhydride of a tribasic acid, anhydride of tetrabasic acid, and substituted anhydrides thereof.

Art Unit: 1725

44. (new) The ink according to claim 43, wherein the metal thin film fragments are obtained from a thin film made of metal.

45. (new) The ink according to claim 43, wherein the metal thin film fragments are obtained from a vapor-deposited metal thin film.

46. (new) The ink according to claim 43, wherein the metal thin film fragments have an average thickness of 0.01 to 0.08 μm .

47. (new) The ink according to claim 43, wherein the content of the carboxyl group, the phosphoric acid group, sulfonic acid group, or metal salts thereof in the binder resin is 50 to 250 mmol/kg.

48 (new withdrawn). A laminated sheet comprising: at least two synthetic resin films for molding, a decorative layer having a metallic luster at a laminate interface of the synthetic resin films and wherein the decorative layer is an ink film formed by the ink composition of claim 33.

49 (new withdrawn). The laminated sheet according to claim 48, wherein one or more of the synthetic resin films provided on at least one side of the decorative layer are transparent or translucent.

Art Unit: 1725

50 (new withdrawn). The laminated sheet according to claim 48, wherein the two or more synthetic resin films contain a thermoplastic resin.

51 (new withdrawn). The laminated sheet according to claim 48, wherein the synthetic resin films contain a thermoplastic resin and a softening point of the binder resin of the decorative layer is lower than that of the thermoplastic resin.

52. (new withdrawn). The laminated sheet according to claim 48, further comprising an adhesive layer at an interface between the at least two synthetic resin films and the decorative layer.

53. (new withdrawn). The laminated sheet according to claim 48, wherein one or more of the synthetic resin films is transparent or translucent and wherein a change rate of a surface luster value of the transparent or translucent synthetic resin film is 20% or less at 200% malleation.

54 (new withdrawn). The laminate sheet according to claim 48, wherein the ink contains no water.

55 (new withdrawn). The laminate sheet according to claim 48, wherein the content of the metal thin film fragments is from 10 to 60% by mass based on a non-volatile component in the ink.

Art Unit: 1725

56 (new - withdrawn). A laminated sheet comprising: at least two synthetic resin films for molding, a decorative layer having a metallic luster at a laminate interface of the synthetic resin films and wherein the decorative layer is an ink film formed by the ink composition of claim 43.

2. Authorization for this Examiner's Amendment was given in a telephone interview with James Armstrong on 10/6/2011.

Statement of reasons of Allowance

3. The present claims are allowable over the “closest” prior art Nowak, Yamamoto, and Malloy, for the following reasons:

Nowak et al discloses an ink composition comprising metallic fragment having a thickness from 0.1 to 2 microns and a diameter from 1 to 200 microns. However, the reference does not disclose or suggest that the composition contain the a binder resin having a binder resin having 50 to 500 mmol/kg of at least one selected from the group consisting of a carboxyl group, a phosphoric acid group, a sulfonic acid group and metal salts thereof as required by claims 33 and 43 present claims. Further, the reference does not suggest of disclose the specific types of binder resins as required in claim 33. Finally, the reference does not disclose that the ink composition comprising the acid anhydride as required in claim 43

Yamamoto discloses a coating composition comprising a resin binder with a content of 500 mmol/kg or more of carboxyl groups. However, the reference does not disclose or suggest the specific resin binders as required in claim 33. Further, the reference does not disclose that the coating composition comprises metallic pigments having the dimensions as required in claims 33 and 43. Finally, the reference does not suggest of disclose an ink composition comprising an acid anhydride as required in claim 43.

Malloy discloses an ink composition comprising an acid anhydride. While the reference discloses the use of pigments in the ink composition, the reference does not suggest of disclose use of metallic fragments with the dimensions as required in the present claims. Finally, the reference does not disclose or suggest that the ink composition comprising the specific resin

Art Unit: 1725

binders as recited in claim 33 or the amount of carboxyl, phosphoric or sulfonic groups contained in the resin as required in claim 43.

With respect to claim 33, given that Nowak, Yamamoto, and Malloy do not disclose or suggest a ink composition comprising the binder resin having 50 to 500 mmol/kg of carboxyl, phosphoric or sulfonic acid groups as required in the present claims and given Yamamoto does not disclose or suggest the use of metallic fragments as required in the present claim and Malloy does not suggest or disclose the use of metallic fragments or the binder resin as required in the present claims, it is clear that Nowak, Yamamoto and Nowak, either alone or in combination do not suggest or disclose the ink composition as recited in the present claims.

With respect to claim 43, given that Nowak, Yamamoto, and Malloy do not disclose or suggest a ink composition comprising the binder resin having 50 to 500 mmol/kg of carboxyl, phosphoric or sulfonic acid groups as required in the present claims, and given that Nowak does not disclose or suggest an anhydride as required in the present claim, Yamamoto does not disclose or suggest the use of metallic fragments as well as acid anhydride as required in the present claim and Malloy does not suggest or disclose the use of metallic fragments or the binder resin as required in the present claims, it is clear that Nowak, Yamamoto and Nowak, either alone or in combination, suggest or disclose the ink composition as recited in the present claim.

4. Claims 48-56 are directed to an allowable product. Pursuant to the procedures set forth in MPEP § 821.04(B), claim 33-47 are, directed to the process of making or using an allowable

Art Unit: 1725

product, previously withdrawn from consideration as a result of a restriction requirement, 48-56 hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Because all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, **the restriction requirement as set forth in the Office action mailed on 10/14/2009 is hereby withdrawn.** In view of the withdrawal of the restriction requirement as to the rejoined inventions, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Thus, given that claims 48-56 include all the limitations of allowable product claims 33 and 43, it is noted that present claims 48-56 are allowable over the "closest" prior art Nowak, Yamamoto, and Malloy for the same reasons set forth in paragraph 3 above.

In light of the above, the present claims are passed to issue.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571)-272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C. K./
Examiner, Art Unit 1725

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 1725